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DOCUMENT-IDENTIFIER: US 6187558 B1
TITLE: Invertebrate intestinal mucin cDNA and related products and methods

Detailed Description Text (15):
The present invention teaches cloned and sequenced full-length cDNAs for IIM from Trichoplusia ni. IIM has a similar structural organization to human intestinal mucin, MUC2, and is expressed in midgut tissue. Sequence analysis indicates potential chitin binding domains that may interact with the chitin present within the PM.

Detailed Description Text (30):
IIM is tightly associated with the PM, and is a major structural constituent of the PM. These results indicate that IIM may have a high affinity to the chitinous fibril network of PMs. By computer-assisted sequence analysis, a protein fragment in region IV was aligned to two chitin binding domains in chitinases from a yeast, Saccharomyces cerevisiae, and a fungus, Rhizopus oligosporus. In addition to region IV, sequences in regions II and VI also show a certain degree of similarity to the chitin binding domains described above; however, the levels of similarity were lower than that found in region IV. In a recent report, a non-mucin insect PM protein from Lucilia cuprina, peritrophin-44, showed binding capability to chitin, but it did not show significant sequence similarity to known chitin binding sequences. However, the cysteine-rich domains with peritrophin-44 shared the same structural feature, a six-cysteine-containing sequence present in cysteine-rich domains in chitinases.

CLAIMS:

8. The method of claim 7 wherein said expression vector encodes a fusion protein comprising the invertebrate intestinal mucin protein or peptide and glutathione-S-transferase.